CLAIMS

What is claimed is:

1. A method, comprising:

forming an electrically conductive interconnect on at least a part of an insulating surface on a substrate; and

growing at least one fiber that is coupled to the electrically conductive interconnect.

2. The method of claim 1, wherein the at least one fiber is grown by DC plasma enhanced chemical vapor deposition.

3. The method of claim 1, wherein growing includes growing at least one carbon nanofiber.

4. The method of claim 1, wherein growing includes growing a plurality of substantially vertically aligned carbon nanofibers.

5. The method of claim 1, wherein growing includes coupling a catalyst to the electrically conductive interconnect before growing.

6. The method of claim 5, wherein the catalyst includes at least one metal selected from the group consisting of nickel, iron and cobalt.

7. The method of claim 5, further comprising removing the catalyst after growing.

8. The method of claim 1, wherein the substrate includes at least one member selected from the group consisting of silicon, quartz, sapphire and magnesia.

9. The method of claim 1, wherein the electrically conductive interconnect includes at least one refractory metal selected from the group consisting of W, Mo, Ta and Nb.

10. The method of claim 1, further comprising electrochemically passivating at least one member selected from the group consisting of at least a portion of a surface of the electrically conductive interconnect and at least a portion of a surface of the at least one fiber.

11. The method of claim 10, wherein electrochemically passivating includes depositing a dielectric layer including at least one member selected from the group consisting of SiO_2, Si_3N_4 and a polymer.

12. The method of claim 10, wherein a tip of the at least one fiber is not passivated.

13. The method of claim 1, further comprising providing a buffer between the at least one fiber and the electrically conductive interconnect.

14. The method of claim 13, wherein the buffer includes at least one substance selected from the group consisting of Ti, W, Mo and titanium nitride.

15. The method of claim 14, wherein growing includes coupling a catalyst to the buffer before growing.

16. The method of claim 15, further comprising removing the catalyst after growing.

17. The method of claim 1, further comprising patterning the electrically conductive interconnect wherein the at least one fiber includes a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

18. An apparatus made by the method of claim 1.

19. An assembly, comprising an article of manufacture made by the method of claim 1.

20. An apparatus, comprising:

an electrically conductive interconnect formed on at least a part of an insulating surface on a substrate; and

at least one fiber coupled to the electrically conductive interconnect.

21. The apparatus of claim 20, wherein the at least one fiber includes at least one carbon nanofiber.

22. The apparatus of claim 21, wherein the at least one carbon nanofiber includes a plurality of substantially vertically aligned carbon nanofibers.

23. The apparatus of claim 20, further comprising a catalyst coupled to the at least one fiber.

24. The apparatus of claim 23, wherein the catalyst includes at least one metal selected from the group consisting of nickel, iron and cobalt.

25. The apparatus of claim 20, further comprising the substrate, wherein the substrate includes at least one member selected from the group consisting of silicon, quartz, sapphire and magnesia.

26. The apparatus of claim 20, further comprising the substrate, wherein the substrate is substantially optically transmissive.

27. The apparatus of claim 20, wherein the electrically conductive interconnect includes at least one refractory metal selected from the group consisting of W, Mo, Ta and Nb.

28. The apparatus of claim 20, further comprising an electrochemical passivator coupled to at least one member selected from the group consisting of at least a portion of a surface of the electrically conductive interconnect and at least a portion of a surface of the at least one fiber.

29. The apparatus of claim 28, wherein the electrochemical passivator includes a dielectric layer including at least one member selected from the group consisting of SiO_2, Si_3N_4 and a polymer.

30. The apparatus of claim 28, wherein a tip of the at least one fiber is not passivated.

31. The apparatus of claim 20, further comprising a buffer between the at least one fiber and the electrically conductive interconnect.

32. The apparatus of claim 31, wherein the buffer includes at least one substance selected from the group consisting of Ti, W, Mo and titanium nitride.

33. The apparatus of claim 20, wherein the at least one fiber includes a plurality of fibers that are individually electrically addressable via the electrically conductive interconnect.

34. The apparatus of claim 20, further comprising a parallel lead for active capacitance cancellation coupled to the electrically conductive interconnect.

35. A biosensor, comprising the apparatus of claim 20.

36. A field emitting array, comprising the apparatus of claim 20.

37. A kit, comprising:
a substrate having an insulating surface;
an electrically conductive interconnect formed on at least a part of the insulating surface; and
at least one fiber coupled to the electrically conductive interconnect.

38. The kit of claim 37, further comprising instructions.